

Date: Thursday, 9/28/2006 3:57:46 PM
 User: Kim Johnston

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services	Drawing Name : 350/355 AS X-TUBE AFT
Job Number : 28777	
Estimate Number : 12486	
P.O. Number : N/A	Part Number : D350748201
This Issue : 9/28/2006 S.O. No. : N/A	Drawing Number : IIN-D350-748 PG5
Prsht Rev. : NC	Project Number : N/A
First Issue : N/A Type : LANDING GEAR	Drawing Revision : A UNDER REVIEW <i>06.10.03</i>
Previous Run : 28776	Material : N/A
Written By : <i>[Signature]</i>	Due Date : 11/20/2006 Qty: 1 Um: Each
Checked & Approved By : <i>[Signature]</i> <i>06 10 03</i>	
Comment : Est Rev: A New Issue 06-07-05 JLM Est Rev: B Update qty of MS21042L5 06-09-12 KJ	

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	DC	DOCUMENT CONTROL
-----	----	------------------



Comment: Photocopy bluefile & type labels per PPPD350-748-201	CHG001
--	--------

06/10/03

2.0	28777A	X-TUBE AS 350/355 HI AFT
-----	--------	--------------------------



Comment: Sub-Component X-TUBE AS 350/355 HI AFT
D350-748-241 B <i>28777A</i>

02/12/12

3.0	PACKAGING 1	PACKAGING RESOURCE #1
-----	-------------	-----------------------



Comment: PACKAGING RESOURCE #1
Pick Packing Kit

4.0	D35001	350 SADDLE
-----	--------	------------



Comment: Qty.: 4.0000 Each(s)/Unit Total: 4.0000 Each(s)
350 SADDLE
Batch: <i>B28794 LX</i>

5.0	D35011	BUSHING
-----	--------	---------



Comment: Qty.: 16.0000 Each(s)/Unit Total: 16.0000 Each(s)
BUSHING
Batch: <i>B28478 LX</i>

07/07/12

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 9/28/2006 3:57:46 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE AFT

Job Number: 28777

Part Number: D350748201

Job Number:



Seq. #:

Machine Or Operation:

Description :

6.0

AN46A

Bolt



Comment: Qty.: 16.0000 Each(s)/Unit Total : 16.0000 Each(s)

Bolt

Batch: M103962 ✓

7.0

AN441A

bolt



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

bolt

Batch: M102552 ✓

8.0

AN532A

Bolt



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Bolt

Batch: M103481 ✓

9.0

AN960JD416

Washer



Comment: Qty.: 32.0000 Each(s)/Unit Total : 32.0000 Each(s)

Washer

Batch: M104215 ✓

10.0

AN960JD516

Washer



Comment: Qty.: 8.0000 Each(s)/Unit Total : 8.0000 Each(s)

Washer

Batch: M104156 ✓

11.0

MS21042L4

Nut



Comment: Qty.: 24.0000 Each(s)/Unit Total : 24.0000 Each(s)

Nut

Batch: M102552 ✓

12.0

MS21042L5

Nut



Comment: Qty.: 4.0000 Each(s)/Unit Total : 4.0000 Each(s)

Nut

Batch: M103830 ✓

EP 07/04/12 @

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☐ No ☒ DQA: 12 Date: 07/01/12
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 9/28/2006 3:57:46 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 350/355 AS X-TUBE AFT

Job Number: 28777

Part Number: D350748201

Job Number:



Seq. #:

Machine Or Operation:

Description :

13.0

QC4

INSPECT 100% KITS FOR COMPLETENESS



02/07/12 ①



Comment: INSPECT 100% KITS FOR COMPLETENESS

02/07/12 ①

14.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-748-201

Location: _____

PPP Rev: _____

A

02/07/12 ①

15.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

02/07/12 ①

Job Completion



02-07-12

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

3.10 Apply a continuous bead of Sikaflex-241/-291 or Proseal 890 or MIL-S-8802 Class B2 sealant in the following locations as per Figure 6:

- A) Along saddle/crosstube interface.
- B) Between the saddle flanges.
- C) Along saddle/skidtube interface.

4.0 WEIGHT AND BALANCE

The following weight and balance information is for Dart crosstube installations only. This data should be similar to the existing installation. Differences from the parts removed are the responsibility of the installer.

DART CROSSTUBE	FWD/AFT	WEIGHT	STA	MOMENT
D350-748-101	Fwd	35.2 lb (16.0 kg)	106.3 in (2.70 m)	3742 lb-in (43.2 kg-m)
D350-748-201	Aft	34.7 lb (15.7 kg)	162.4 in (4.12 m)	5635 lb-in (64.7 kg-m)

5.0 PARTS LIST

Qty -101	Qty -201	Part Number	Description
X		D350-748-101	CROSSTUBE INSTALLATION, AS 350/355 HIGH FWD
	X	D350-748-201	CROSSTUBE INSTALLATION, AS 350/355 HIGH AFT
1		D350-748-141	CROSSTUBE ASSEMBLY, AS 350/355 HIGH FWD
	1	D350-748-241	CROSSTUBE ASSEMBLY, AS 350/355 HIGH AFT
*2	*2	D3502-1	SUPPORT
*2	*2	D2856-400-710	ABRASION STRIP
*1	*1	AELS-1032-225	INSERT
*2	*2	MS21920-20	CLAMP
*1	*1	MS27039-1-10	SCREW
*1	*1	AN960JD10	WASHER
4	4	D3500-1	SADDLE
16	16	D3501-1	BUSHING
16	16	AN4-6A	BOLT
8	8	AN4-41A	BOLT
4	4	AN5-32A	BOLT
32	32	AN960JD416	WASHER
8	8	AN960JD516	WASHER
24	24	MS21042L4	NUT (OR MS21042-4)
4	4	MS21042L5	NUT (OR MS21042-5)

* REFERENCE ONLY. PARTS ARE INCLUDED IN D350-748-141/241 ASSEMBLIES ABOVE

SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 28777

Date: Thursday, 9/28/2006 3:58:04 PM
 User: Kim Johnston

Process Sheet

Customer	: CU-DAR001 Dart Helicopters Services	Drawing Name	: X-TUBE AS 350/355 HI AFT
Job Number	: 28777A		
Estimate Number	: 12483		
P.O. Number	: N/A	Part Number	: D350748241
This Issue	: 9/28/2006 S.O. No. : N/A	Drawing Number	: D350-748-241
Prsht Rev.	: NC	Project Number	: N/A
First Issue	: N/A Type : LANDING GEAR	Drawing Revision	: C UNDER REVIEW 06.10.03
Previous Run	: 28776A	Material	: N/A
Written By	:	Due Date	: 11/20/2006 Qty: 1 Um: Each
Checked & Approved By	: <u>06 10 03</u>		
Comment	: Est Rev: A New Issue 06-07-05 JLM Est Rev: B Update cadplate process 06-09-12 KJ		

Additional Product

Job Number:



Seq. #:	Machine Or Operation:	Description :
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1.0	DC	DOCUMENT CONTROL
-----	----	------------------



Comment: DOCUMENT CONTROL

Photocopy bluefile and create labels as per PPP D350-748-241 CHG001

2.0	D6018125	Crosstube Material
-----	----------	--------------------



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Crosstube Material

D6018-125

2.299" OD X 2.000" ID

Batch: 327472

06/10/04

3.0	MORI SEIKI	MORI SEIKI CNC LATHE LARGE
-----	------------	----------------------------



Comment: MORI SEIKI CNC LATHE LARGE

1-Fill tube with sand & install plugs on both ends as per Folio FA647 MS

2-Turn first side as per Folio FA647 MS

3-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D350-748-241. MS 06/10/04

4.0	QC1	INSPECT ALL DIM TO DIM SHEET
-----	-----	------------------------------



Comment: INSPECT ALL DIM TO DIM SHEET

MS 06/10/04 1

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 9/28/2006 3:58:04 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI AFT

Job Number: 28777A

Part Number: D350748241

Job Number:



Seq. #:

Machine Or Operation:

Description :

5.0

MORI SEIKI

MORI SEIKI CNC LATHE LARGE



Comment: MORI SEIKI CNC LATHE LARGE

1-Turn second side as per Folio FA647 MS

2-Deburr & Inspect for surface damage. Repair damage within limits as per Dwg D350-748-241. MS

3-Scribe part # as per Dwg D350-748-241 MS

06/10/14

1

6.0

QC1

INSPECT ALL DIM TO DIM SHEET



Comment: INSPECT ALL DIM TO DIM SHEET

MS

06/10/14

1

7.0

QC8

SECOND CHECK



Comment: SECOND CHECK

BF

06.10.08

1

8.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

Remove all Machining Marks

DP

6-10-13

9.0

OUTSIDE SERVICE

OUTSIDE SERVICES



Comment: Sub-Contracting OUTSIDE SERVICES

Issue P/O: 2263

CL06/10/17 @

Heat Treat to min 180 KSI As per Dwg D350-748-241

Sand Blast tube after Heat Treat

Possible Supplier: Vac Aero

Ensure Certificate of Conformity is attached

10.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure certificate of conformaty is attached

LB 06/11/30 @

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 9/28/2006 3:58:04 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI AFT

Job Number: 28777A

Part Number: D350748241

Job Number:



Seq. #:

Machine Or Operation:

Description :

11.0

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

Job 11-30

12.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Oil inside of tube with LPS-3 .

A/R

LPS-3

Batch:

104161

EL/K

0704-30

(1)

13.0

BENDING

BENDING MACHINE



Comment: BENDING MACHINE

Bend tube as per Dwg D350-748-241 using CNC bender program D350A and Folio FT

EL 7-4-30

14.0

QC6

DIMENSIONAL CHECK



Comment: DIMENSIONAL CHECK

7-05-02 (1)

15.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Remove all marks from tube within limits of D350-748-241

7-6-13

2-Drill Tube as per Dwg D350-748-241 Using DT8876 Drill Jigs,

Set-up drill table as per QSI 010

3-Deburr

4-Engrave Part # and Batch # as per Dwg D350-748-241

DP

7-6-13

(PTC)

16.0

OUTSIDE SERVICE

OUTSIDE SERVICES



Comment: Sub-Contracting OUTSIDE SERVICES

Issue P/O:

3975

Stress relief at 375° for 5 hours

Magnetic Particle Inspect per ASTM E1444

Cadium Plate per QQ-P-416F, Class 1, Type 2

Embrittle relief at 375° for 8 hours, Chromate Treat

Possible Supplier: Southwest United Industries

Ensure Certificate of Conformity is attached

CL 07106114 (1)

POSITIVE RECALL

EFFECTIVE *06-10-03* AUTH *LP*

RELEASED _____ DATE _____

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	
07-06-13	15.1	Add QCS Perm. Change <i>[Signature]</i>				<i>[Signature]</i>	<i>[Signature]</i>	
		QCS	<i>[Signature]</i>	07-06-13	1	<i>[Signature]</i>	<i>[Signature]</i>	

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 9/28/2006 3:58:05 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI AFT

Job Number: 28777A

Part Number: D350748241

Job Number:



Seq. #:

Machine Or Operation:

Description :

17.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Receive & Inspect For Transit Damage

Ensure certificate of conformity is attached

Handwritten: 07/09 8
07-10(1)

18.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

19.0

SPRAY PAINTING

SPRAY PAINTING



Comment: SPRAY PAINTING

1-Prime inside crosstube as per QSI 005 4.2

2-Paint Outside of Tube as per Dart QSI 005 4.2

Handwritten: > ml 07 07 10

Handwritten: (1)

20.0

QC14

Inspect Spray Paint



Comment: Inspect Spray Paint

Then, Wrap in plastic bag to protect from scratches

Handwritten: 07-07-12

21.0

D35021

SUPPORT



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

SUPPORT

Batch: 28476

Handwritten: 07-07-12

22.0

D2856400

Abrasion Strip



Comment: Qty.: 1.2401 f(s)/Unit Total: 1.2401 f(s)

Abrasion Strip 7.10" long x2

Batch: 32020

Handwritten: 07-07-12

23.0

ALS41032225

Insert



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Insert

Batch: 19393

Handwritten: 07-07-12

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 9/28/2006 3:58:05 PM
User: Kim Johnston

Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI AFT

Job Number: 28777A

Part Number: D350748241

Job Number:



Seq. #:

Machine Or Operation:

Description :

24.0

AN960JD10

Washer



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Washer

Batch: 100151

ET 07-07-12

25.0

MS2192020

Clamp (per MIL-DTL-8783C)



Comment: Qty.: 2.0000 Each(s)/Unit Total: 2.0000 Each(s)

Clamp (per MIL-DTL-8783C)

Batch: 102712

ET 07-07-12

26.0

MS27039110

Screw



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Screw

Batch: 18836

ET 07-07-12

27.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Install Ground wire Insert, then insert screw and washer

2-Install Abrasion strips as per Dwg D350-748-241 & QSI 035.

3-Install supports Using Dt8876 as per Dwg D350-748-241, Torque to 60-80 IN-LBS

} ET 07-07-12

28.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

ET 07-07-12 (X1)

29.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and pack for shipping as per PPP D350-748-241

Location: _____

PPP Rev: _____

PPP 28777 07/12 (1)

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

Date: Thursday, 9/28/2006 3:58:05 PM
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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: X-TUBE AS 350/355 HI AFT

Job Number: 28777A

Part Number: D350748241

Job Number:



Seq. #:

Machine Or Operation:

Description :

30.0

QC21

FINAL INSPECTION/W/O RELEASE



Comment: FINAL INSPECTION/W/O RELEASE

Job Completion



UL 07-07.12

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN QP	DRAWN BY QP	DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
CHECKED #	APPROVED #	DRAWING NO. D350-748-241	REV. C SHEET 1 OF 3
DATE 06.08.14		TITLE CROSSTUBE (AS 350/355 HI AFT) SCALE NTS	
A	06.03.31	NEW ISSUE	
B	06.06.30	ADD D6018-125 & PRIME AND PAINT	
C	06.08.14	ADD CAD PLATING	

UNDER REVIEW

UP 06.08.14

CAD PARTIAL PROCEDURE
WITH CHANGE

QTY	P/N	DESCRIPTION
X	D350-748-241	CROSSTUBE ASSEMBLY (AS 350/355 HI AFT)
1	D6018-125	CROSSTUBE (OR D6015-125)
2	D3502-1	SUPPORT
2	D2856-400-710	ABRASION STRIP
1	AELS-1032-225	INSERT
1	AN960JD10	WASHER
2	MS21920-20	CLAMP (PER DART SPEC. M-MS21920-20)
1	MS27039-1-10	SCREW

D350-748-141 CROSSTUBE:

- 1) MATERIAL: MANUFACTURED FROM D6018-125 OR D6015-125
FINISHED LENGTH = 122.70±0.06
- 2) MACHINE PER MACHINING DETAIL ON PAGE 3. BLEND OUT ALL EDGES FROM MACHINING LONGITUDINALLY, TRANSITIONS SHOULD BE SMOOTH. NOTE: ALL HOLES ARE DRILLED AFTER BENDING.
- 3) SCRIBE DART PART NUMBER AND BATCH NUMBER IN THIS AREA WITH VIBRATING STYLUS.
- 4) BEND PROGRESSIVELY WITH A MINIMUM OF 7 PASSES. MAXIMUM TUBE FLATTENING DUE TO BENDING IS 6% BASED ON O.D.
- 5) HEAT TREAT TO MIN. 180 KSI PER MIL-T-6736 OR AMS 2759-1C AFTER TURNING
- 6) FINISH: CADMIUM PLATE PER QQ-P-416F, CLASS 1, TYPE II
MAGNETIC PARTICLE INSPECT PER ASTM E1444 AFTER CADMIUM PLATING
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 7) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE. WHEN DRILLING HOLES EXTREME CARE MUST BE TAKEN AND CAREFUL DEBURRING PERFORMED TO ENSURE A CLEAN HOLE WITH NO CRACKING/CHIPPING/GROOVES.
- 8) INSTALL D2856-400-710 ABRASION STRIP WITH A GAP ON BOTTOM SIDE OF CROSSTUBE, CENTERED OPPOSITE D3502-1 SUPPORT, PER QSI 035.
- 9) TORQUE MS21920-20 CLAMPS 60 TO 80 IN-LB
- 10) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 11) ALL DIMENSIONS ARE IN INCHES
- 12) PART IS SYMMETRIC ABOUT CENTERLINE EXCEPT FOR Ø0.297 HOLE.

RELEASED

06.08.15

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RETURN TO

ENGINEERING

UNCONTROLLED COPY

NOT TO AMENDMENT

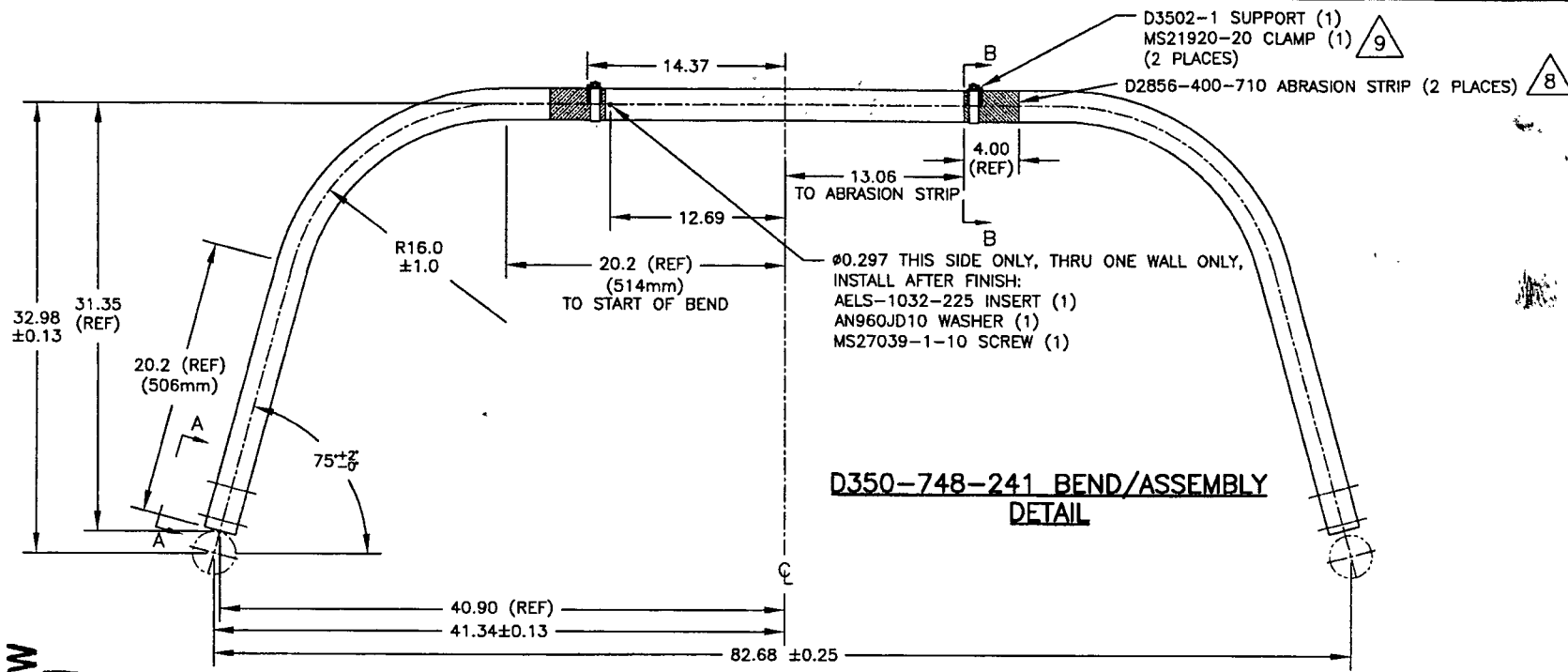
WITHOUT NOTICE

WORK ORDER

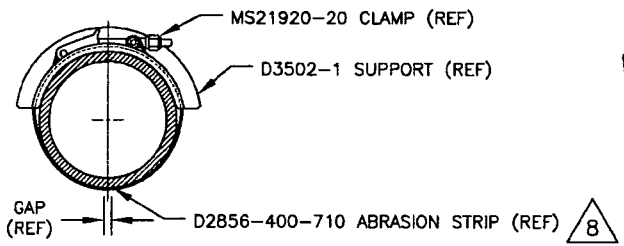
NO. 28777A

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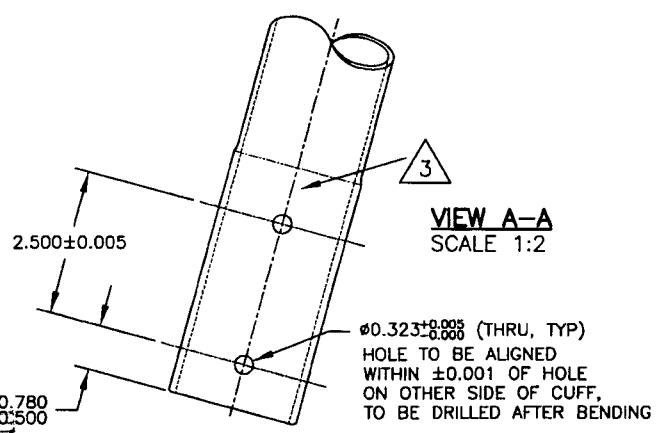
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SECTION B-B
SCALE 1:2



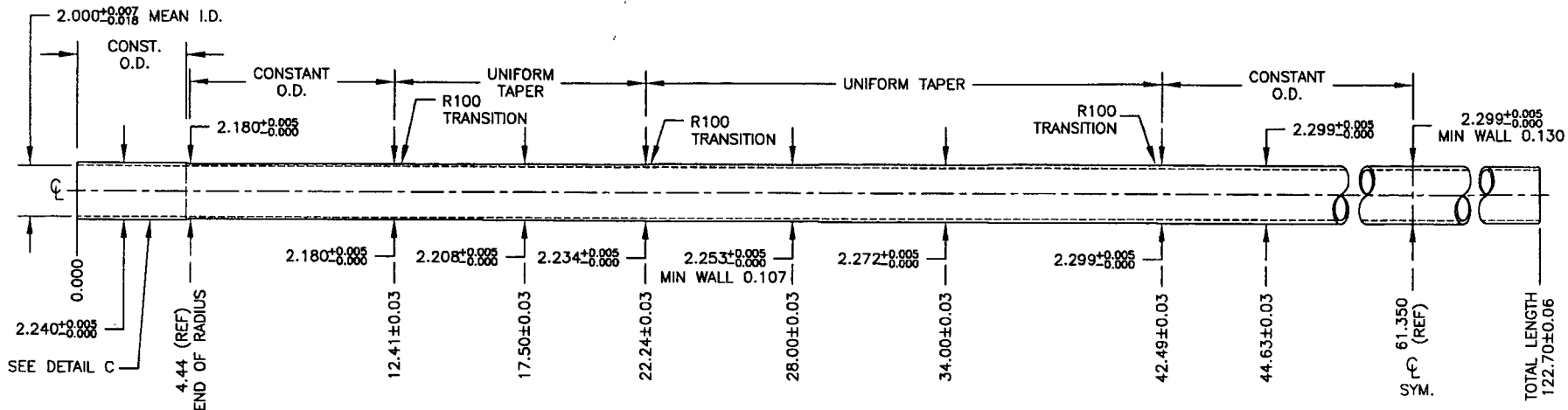
RELEASED
06-08-15



COPYRIGHT © 2006 BY DART AEROSPACE LTD.		DESIGN	97	DRAWN BY	97	DART DART AEROSPACE LTD. TWICKENHAM, GLOUCESTER, GLOUCESTER, GLOUCESTER	REV. C
THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.		CHECKED	4	APPROVED	4		
		DATE	06.08.14	DRAWING NO.		D350-748-241	SHEET 2 OF 3
				TITLE		CROSSTUBE (AS 350/355 HI AFT)	SCALE 1:8

UNDER REVIEW

NO 28777A
 WORK ORDER
 WITHOUT NOTICE
 SUBJECT TO AMENDMENT
 UNCONTROLLED COPY
 RETURN TO
 ENGINEERING
 SHOP COPY

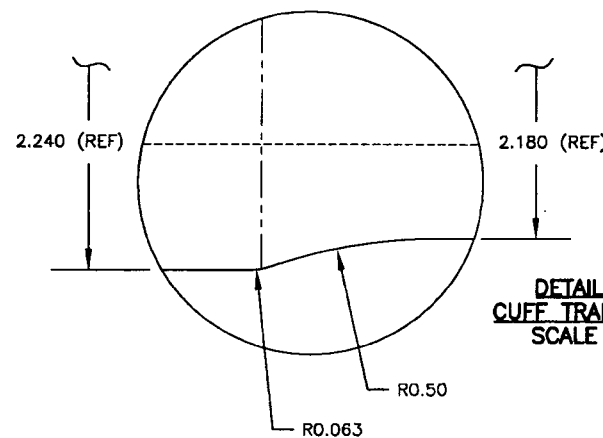
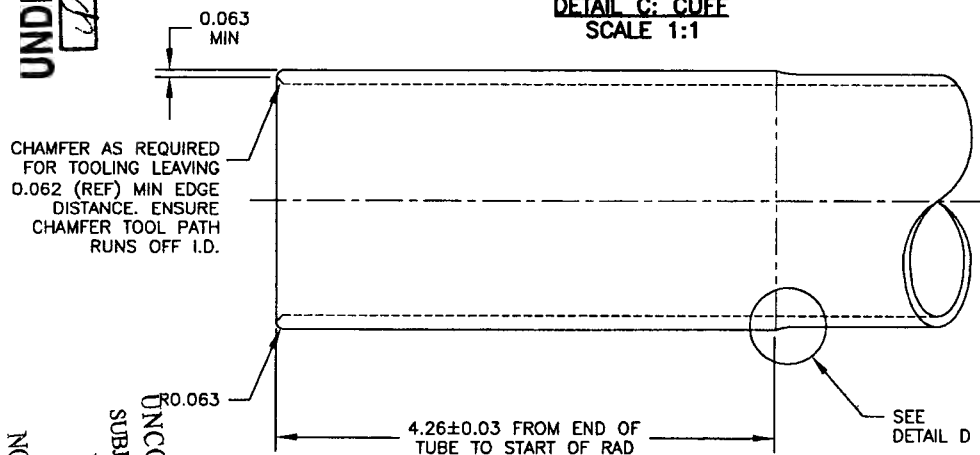


D350-748-241 MACHINING DETAIL

RELEASED

06.08.15

DETAIL C: CUFF SCALE 1:1



DETAIL D: CUFF TRANSITION SCALE 9:1

UNDER REVIEW

CHAMFER AS REQUIRED
FOR TOOLING LEAVING
0.062 (REF) MIN EDGE
DISTANCE. ENSURE
CHAMFER TOOL PATH
RUNS OFF I.D.

NO. 28777A
WORK ORDER
SUBJECT TO AMENDMENT
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DART AEROSPACE LTD.

DESIGN qp	DRAWN BY qp	DART	DART AEROSPACE LTD. WINDSOR, ONTARIO, CANADA
CHECKED #	APPROVED #	DRAWING NO. D350-748-241	REV. C SHEET 3 OF 3
DATE 06.08.14		TITLE CROSSTUBE (AS 350/355 HI. AFT)	SCALE 1:4

DART AEROSPACE LTD		Work Order:
Description: Crosstube Assembly		Part Number: D350748241
Inspection Dwg: D350-748-24 Rev: C		Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

☒ First Article
 ☐ Prototype

Inspection Sheet Drawing Dimension		Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A	2.240	+ .005 - .000	2.241	✓			
	2.180	+ .005 - .000	2.182	✓			
	2.208	+ .005 - .000	2.211	✓			
	2.234	+ .005 - .000	2.238	✓			
	2.253	+ .005 - .000	2.256	✓			
	2.272	+ .005 - .000	2.276	✓			
	2.299	+ .005 - .000	2.301	✓			
	.063	+ .010 - .010	.063	✓			
	R.50	+ .010 - .010	.50	✓			
	4.26	+ .030 - .030	4.26	✓			
	122.70	+ .060 - .060	122.70	✓			
SIDE B	2.240	+ .005 - .000	2.240	✓			
	2.180	+ .005 - .000	2.181	✓			
	2.208	+ .005 - .000	2.211	✓			
	2.234	+ .005 - .000	2.236	✓			
	2.253	+ .005 - .000	2.255	✓			
	2.272	+ .005 - .000	2.274	✓			
	2.299	+ .005 - .000	2.300	✓			
	.063	+ .010 - .010	.063	✓			
	R.50	+ .010 - .010	.50	✓			
	4.26	+ .030 - .030	4.26	✓			

Measured by: MS	Audited by: BG	Prototype Approval: N/A
Date: 06/10/14	Date: 06.10.08	Date: N/A

Rev	Date	Change	Revised by	Approved
A		New Issue	KJ/JLM	



VAC AERO
INTERNATIONAL INC.

PACKING SLIP

OAK 80520-1



HEAD OFFICE
1371 SPEERS ROAD, OAKVILLE, ONTARIO
CANADA L6L 2X5
TEL: (905) 827-4171 FAX: (905) 827-7489



QUEBEC DIVISION
7450 RUE VÉRITÉ STREET, ST. LAURENT, QUÉBEC
CANADA H4S 1C5
TEL: (514) 334-4240 FAX: (514) 334-6269

GST No.: R105468102

11/27/2006

MM / DD / YYYY

PAGE: 1

1DAR01

BILL TO: DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON

SHIP TO: DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON

K6A 1K7

K6A 1K7

DATE SHIPPED	SHIP VIA	F.O.B.
11/27/2006		ORIGIN
CUSTOMER P/O No.	JOB No.	TERMS
PO00002263		COD

LN	PART NO	DESCRIPTION	UOM	QTY ORDERED	QTY SHIPPED	B/O QTY
01	D350-CROSS TUBES		EA	8	8	0
		Process Specifications: Procedure: 4353 HEAT TREATED TO 180-200 KSI PER AMS 2759-1C 100% HARDNESS TESTED PER ASTM E-18 HRC 40-43 MATERIAL: 4130 SANDBLASTED PARTS				
	1 PIECE	D350748141 B28771				
	1 PIECE	D350748141 B28770				
	1 PIECE	D350748141 B28772				
	1 PIECE	D350748141 B28773				
	1 PIECE	D350748241 B28776				
	1 PIECE	D350748241 B28777				
	1 PIECE	D350748241 B28775				
	1 PIECE	D350748241 B28774				
02	MC	MINIMUM CHARGE		1	1	0

No claims for shortage in weight or count will be entertained, unless presented within 5 working days after receipt of materials by customer.



VACUUM BRAZING · HEAT TREATING · SPECIAL PROCESSING · FURNACE EQUIPMENT
TURBINE COMPONENT OVERHAUL · PLASMA AND OTHER COATINGS



HEAT
TREATING

GST No.: R105468102

OAK 80520-1

☒ HEAD OFFICE
1371 SPEERS ROAD, OAKVILLE, ONTARIO
CANADA L6L 2X5
TEL: (905) 827-4171 FAX: (905) 827-7489

☐ 2009 WYECROFT ROAD, UNIT B
OAKVILLE, ONTARIO
CANADA L6L 6J4
TEL: (905) 827-7377 FAX: (905) 827-1380

☐ QUEBEC DIVISION
7450 RUE VERITE STREET, ST. LAURENT, QUEBEC
CANADA H4S 1C5
TEL: (514) 334-4240 FAX: (514) 334-6269

11/27/2006

MM / DD / YYYY

PAGE: 1

1DAR01

BILL TO: DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON

SHIP TO: DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON

K6A 1K7

K6A 1K7

DATE SHIPPED	SHIP VIA	F.O.B.
11/27/2006		ORIGIN
CUSTOMER P/O No.	JOB No.	TERMS
PO00002263		COD

PART No.	DESCRIPTION	UOM	QTY ORD	QTY SHPD	TEST RESULTS
D350-CROSS TUBES		EA	8	8	
	<p>Process Specifications: Procedure: 4353</p> <p>HEAT TREATED TO 180-200 KSI PER AMS 2759-1C</p> <p>100% HARDNESS TESTED PER ASTM E-18</p> <p>HRC 40-43</p> <p>MATERIAL: 4130</p> <p>SANDBLASTED PARTS</p>				<div data-bbox="933 1018 1485 1249" data-label="Text"> <p>100% HARDNESS TESTED</p> <p>8 PCS → 42/43 HRC</p> </div>
1 PIECE	D350748141 B28771				
1 PIECE	D350748141 B28770				
1 PIECE	D350748141 B28772				
1 PIECE	D350748141 B28773				
1 PIECE	D350748241 B28776				
1 PIECE	D350748241 B28777				
1 PIECE	D350748241 B28775				
1 PIECE	D350748241 B28774				

I hereby certify that the material covered by this release note has been inspected and tested and conforms to all specifications relevant thereto in accordance with the conditions of the contract / or purchase order.

ON BEHALF OF VAC AERO INTERNATIONAL INC.

Authorized Q.C. Inspector



VACUUM BRAZING - HEAT TREATING - SPECIAL PROCESSING - FURNACE EQUIPMENT
THERMAL COMPONENT OVERHAUL - PLASMA AND OTHER COATINGS



DART AEROSPACE
1270 Aberdeen Str.
Hawkesbury, ON
K6A 1K7

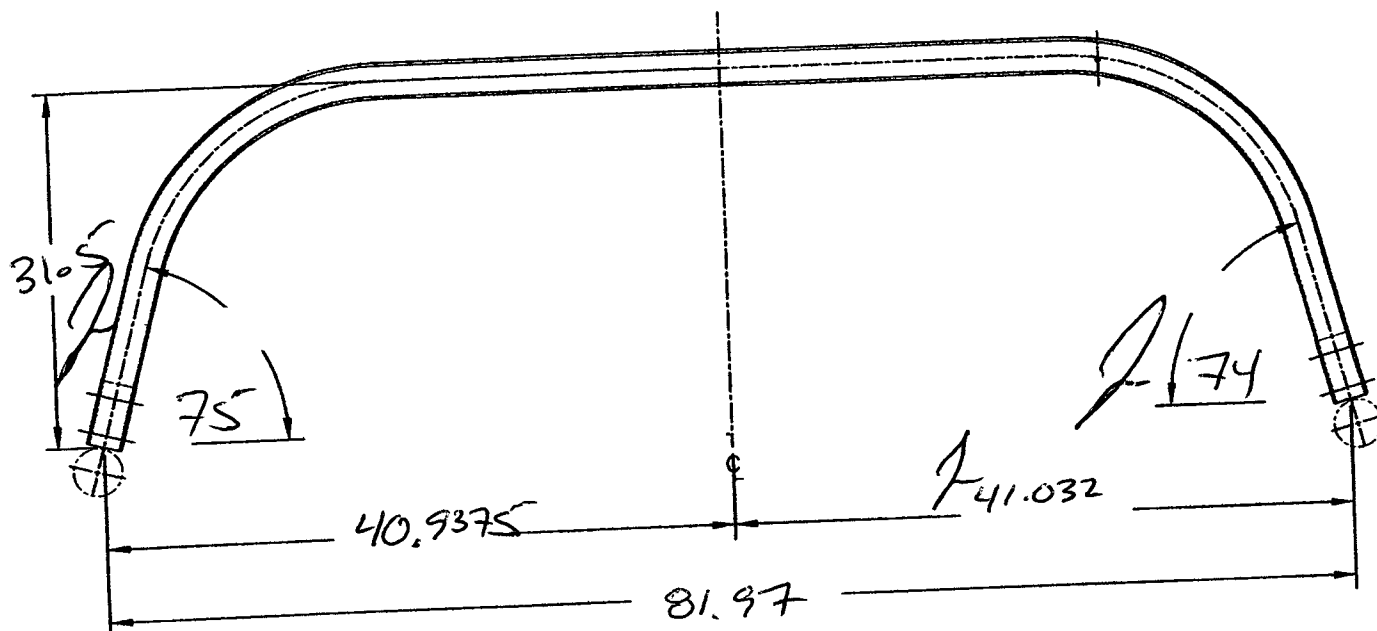
N° DE COMMANDE - ORDER NO.		DÉP - DEPT.	DATE 06-10-17
VENDU À - SOLD TO		EXPÉDIÉ À - SHIP TO VAC AERO 1371 Speers Rd	
ADRESSE - ADDRESS		ADRESSE - ADDRESS Oakville, ON L6L 2X5	

DATE D'EXPÉDITION - SHIPPING DATE	VIA	CONDITIONS - TERMS	N° D'ENR. DE TAXE - TAX REG. NO.	VENDEUR - SALESPERSON
				905-827-4171 ANIMESH
	1	D350-748-141 B28771A		
	1	D350-748-141 B28770A		
	1	D350-748-141 B28773A		
	1	D350-748-141 B28772A		
	1	D350-748-241 B28776A		
	1	D350-748-241 B28777A		
	1	D350-748-241 B28775A		
	1	D350-748-241 B28774A		
Heat treat to min. 180 Ksi Sand blast after heat treat Certificate of conformity req'd with return Return via Epic collect xct # 4300450343				
			TPS/GST	
			TVP/PST	
SIGNATURE		N° LIC. - LIC. NO.	TOTAL	

274726

DART AEROSPACE LTD		Work Order: 28777
Description: Crosstube High Aft (AS350/355)		Part Number: D350-748-201
Inspection Dwg: D350-748-241 Rev: D		Page 1 of 1

Required Dimension	Min	Max
Height	31.22	31.48
1/2 Span	40.77	41.03
Angle	75	77
Total Span	81.54	82.06



Comments
tube will be cut to nominal height

QC15 Inspection	20502
Date	

Rev	Date	Change	Revised by	Approved
A	07.02.06	New Issue	KJ/JM	

**CERTIFICATE OF
CONFORMANCE**

**CADORATH PLATING CO. LTD.
2150 LOGAN AVENUE
WINNIPEG, MANITOBA R2J-0J1**

DATE: Jun-29-2007

CONSIGNED TO: Dart Aerospace Ltd.
1270 Aberdeen St.
Hawksbury, ON K6A 1K7

W/O #: 68048

INVOICE #: 35047

**CONTRACT OR
PURCHASE ORDER #** P000003975

DESCRIPTION: SKID

QTY 1

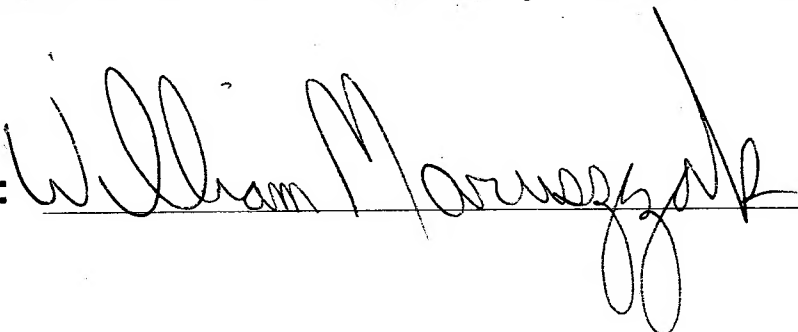
P/N # D350748241

S/N # B28777

**MPI IAW ASTM-E-1444. CADMIUM PLATE IAW AMS-QQ-P-416 TYPE 2
CLASS 2. BAKE HEAT CART #7951 AND 7997**

**CERTIFICATE: I certify that the items indicated here on have
been inspected and tested and conform to all specifications
and requirements detailed on the contract or purchase order.**

Approved Inspector:



Packing Slip



Cadorath Plating Co. Ltd.

2150 Logan Avenue, Winnipeg, Manitoba R2R-0J2

Phone: (204) 633-9420 Fax: (204) 633-8033

Sold To

Dart Aerospace Ltd.

1270 Aberdeen St.

Hawkesbury, ON K6A 1K7

Ship To:**INVOICE NUMBER:**

35047

Net 2% Interest Per Month charged on Overdue Accounts.

Any claims for shortages, overcharges, or damaged goods must be made within seven (7) days from receipt of goods.

Customer Order #:	Date Received:	Terms:	G.S.T. #:	Ship Via:	Ship Date:
P000003975	Jun-19-2007	NET 30 DAYS	10071 6547 RT0001		Jun-29-2007

Item #	Qty	P/N & Description
1	1 EA	SKID S/N B31017 P/N D350748141 W/O 68044
2	1 EA	SKID S/N B31015 P/N D350748141 W/O 68045
3	1 EA	SKID S/N B29761 P/N D350748241 W/O 68046
4	1 EA	SKID S/N B29763 P/N D350748241 W/O 68047
5	1 EA	SKID S/N B28777 P/N D350748241 W/O 68048

